

A Phase I Archeological Survey
of a Proposed Borrow Pit
at Target 10-Alpha on the Yano Range
on the Fort Knox Military Reservation,
Hardin County, Kentucky

by
Pamela A. Schenian
Staff Archeologist

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Pamela A. Schenian
Staff Archeologist
and Project Principal Investigator

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Directorate of Public Works, Fort Knox, Kentucky 40121-5000

ABSTRACT

In March 1994, the Fort Knox Staff Archeologist and Assistant Staff Archeologist conducted a Phase I archeological survey of a proposed borrow pit immediately adjacent to Target 10-Alpha on the Yano Range, on the Fort Knox Military Reservation, Hardin County, Kentucky. The proposed borrow pit encompasses approximately 1.2 ha (3.0 acres). The survey resulted in the discovery of no archeological materials or deposits. It is recommended that the Target 10-Alpha borrow pit be used as proposed.

MANAGEMENT SUMMARY

In accordance with Executive Order 11593 and other applicable federal laws and regulations, a Phase I archeological study was conducted of a proposed borrow pit near Target 10-Alpha on the Yano Range on the Fort Knox Military Reservation, Hardin County, Kentucky. No evidence was found in the proposed borrow area of archeological materials or potential cultural deposits. It is recommended that the borrow pit be used as proposed.

TABLE OF CONTENTS

	<u>Page</u>
Abstract.....	i
Management Summary.....	ii
Table of Contents.....	iii
List of Figures.....	iii
I. Introduction.....	1
II. Previous Research.....	5
III. Survey Predictions.....	9
IV. Setting and Field Methods.....	9
V. Conclusions and Recommendations.....	10
References Cited.....	12
Appendix A. Resumes of Key Personnel	17

LIST OF FIGURES

	<u>Page</u>
Figure 1. Location of Proposed Borrow Pit	2
Figure 2. Project Vicinity Topography Prior to 1992 Yano Range Improvements	3
Figure 3. Plan View of the Project Area	4

I. INTRODUCTION

In March 1994, the Fort Knox Staff Archeologist and Assistant Staff Archeologist conducted a Phase I archeological survey of a proposed borrow pit near Target 10-Alpha on the Yano Range on the Fort Knox Military Reservation, Hardin County, Kentucky (Figures 1 through 3). The survey area comprises a roughly triangular plot of land, approximately 3.0 acres (1.2 ha) in size. The proposed borrow pit is bounded to the west, northwest, and east by gravel roads and to the south by the target berm and a shallow ditch.

The Yano Range has been in use for several decades. Figure 2 depicts the road pattern and topography of the project vicinity in 1985. Figure 1 depicts the road patterns and topography of the Yano Range in 1991. Figure 3 depicts the current road pattern, following the 1992 range improvements. The range was not surveyed for cultural resources prior to the range improvements construction due to the high potential for unexploded ordnance.

During July and August, 1993, the Fort Knox Staff Archeologist obtained all the documents necessary to perform Phase I literature searches for the installation. Copies of all of the state site forms for the archeological sites on the Fort Knox installation were acquired from the Office of State Archaeology (OSA), University of Kentucky, Lexington, and all reports of previous investigations on the installation or immediately adjacent to the installation were gathered from various sources. She also updated the site files by comparing the Fort Knox cultural resources quadrangle maps against the quadrangles on file at the OSA. All documents necessary to perform Phase I literature searches for the installation are present at the Cultural Resource Management (CRM) Branch of the Directorate of Public Works, Fort Knox, therefore, no file check was made with the OSA and the Kentucky Heritage Council specifically for this project. In addition to the holdings concerning recorded archeological sites, the CRM office also has a collection of maps of the installation vicinity which can be used to identify potential historic archeological site locations and to document previous landuse both before and after the creation of the installation. These include the installation land acquisition maps, oil and gas well ownership maps from the 1920's and 1930's, a 1903 farmstead map, and various editions of U.S.G.S. topographic maps, and Fort Knox special maps.

The proposed borrow pit area is located in the Plain section of the Pennyryle cultural landscape. The project area is located in the Mississippian Plateau physiographic region, near the boundary with the Knobs physiographic region. It is on the Rolling Fork floodplain, at an elevation of approximately 450 feet. Soils are classified as

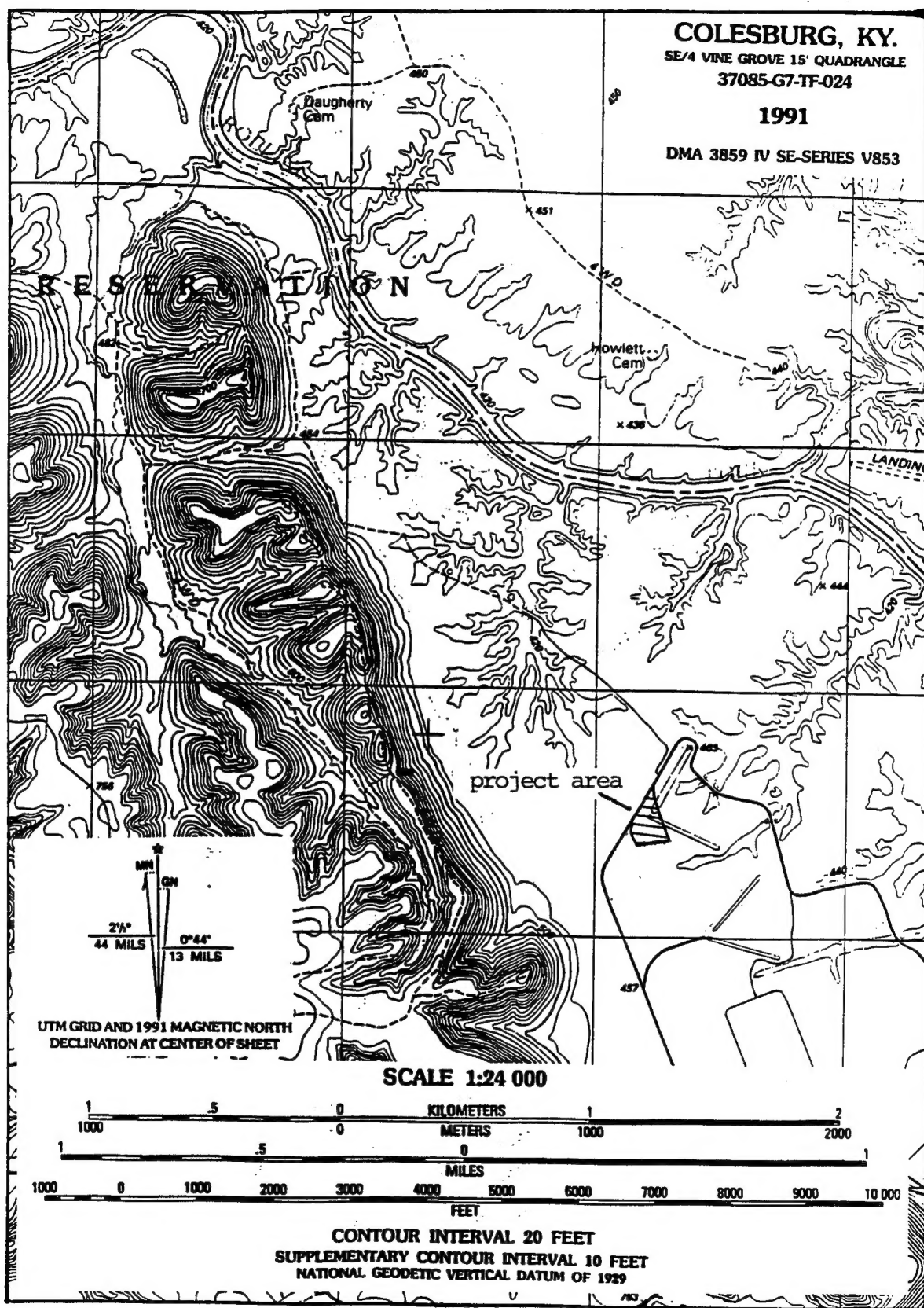


Figure 1. Location of Proposed Borrow Pit.

McGary-Markland-Nolin soil association (Arms et al. 1979: General Soil Map). The nearest segment of the Rolling Fork lies 1.15 km north of the project area.

The archeological survey was conducted in preparation for the use of fill from the proposed borrow pit for the repair of target berms on the Yano Range. The archeological survey and literature review were required to comply with the National Environmental Protection Act, or NEPA, (Public Law 91-190), the Historic Preservation Act of 1966, as amended (Public Law 89-665), the Archaeological Resources Protection Act of 1979 (Public Law 96-95), Presidential Executive Order 11593, and Army Regulation 420-40.

The project area was surveyed on March 11, 1994. A total of 1.0 person hours were spent in the survey of the proposed borrow pit. No artifacts were observed or collected in this survey. Documentation of this project will be curated at the University of Louisville Program of Archaeology, on a "permanent loan" basis, under contract number DABT 23-93-C-0093, for curatorial and technical support (copy of contract on file, DPW, Fort Knox, Kentucky). Duplicate copies of the documentation will be stored at the Directorate of Public Works (DPW), U.S. Army Armor Center and Fort Knox, Fort Knox, Kentucky.

II. PREVIOUS RESEARCH

A number of cultural resource management (CRM) projects have been conducted on the Fort Knox military reservation. Numerous projects also have been conducted in the portions of Bullitt, Meade, and Hardin Counties outside the military reservation, according to the state archeological bibliography and updates. O'Malley et al. (1980) provide an in-depth discussion of research in Bullitt, Hardin, and Meade counties through 1979, and Schenian (1991) and Schenian and Mocas (1992) provide a summary of the research which has taken place since the O'Malley et al. (1980) study was completed. This section will focus on the projects which have been conducted on the military reservation and within the vicinity of the current project area.

There are 112 Hunting Areas on the Fort Knox installation, plus an approximately 10,000 acre cantonment area and a small amount of acreage which lies outside the cantonment area or any hunting area. O'Malley et al. (1980) surveyed approximately one-quarter of each of the 96 hunting areas which did not contain grenade ranges. O'Malley et al. (1980) recorded 415 sites (15Bu295 through 15Bu410, 15Hd109 through 15Hd294, and 15Md103 through 15Md242). Some of these sites were recorded outside the official survey areas, and were discovered while gaining access to the selected survey areas from the closest access road. Some of the

sites are isolated finds. O'Malley et al. (1980) did not evaluate the National Register status of the sites inspected in a manner which meets the current standards, although opinions are offered on many of the site forms and in an appendix of the report of investigations. The purpose of the O'Malley et al. (1980) study was to provide a preliminary inventory of portions of the installation and to develop a database for the predictive modeling of site locations on the installation, and not to evaluate sites for a task-specific construction project.

Holmberg (1991) prepared an archival study on the four mill sites (15Md164, 15Md176, 15Md185, and Grahamton) recorded by O'Malley et al. (1980) in the Meade county section of the base. Holmberg's (1991) study includes an appendix (Ball 1991a) delimiting a scope of services for the testing of the mill sites. This testing is scheduled to be performed in 1994 and 1995 through a Legacy grant.

A number of projects have been conducted in conjunction with proposed timber harvests. Bush et al. (1988) revisited 15Bu319 and recorded sites 15Hd438 through 15Hd446 and 15Bu485 through 15Bu491 in their survey of timber areas in Hunting Areas 41, 42, and 52. Myers (1990) surveyed 287 acres in Hunting Area 95, recording 15Bu495 through 15Bu502, and describing modern house and garbage dump sites. Mueller (1991) surveyed 270 acres in Hunting Area 1, revisiting 15Md11, 15Md152, and 15Md159, and recording 15Md322 through 15Md325, two historic cemeteries, five prehistoric isolated finds, and three modern structures. Schenian and Mocas (1992) surveyed 600 acres and attempted to relocate and flag previously recorded sites in an additional 300 acres. Their project areas consisted of 14 timber parcels located in Hunting Areas 13, 74, 76, 77, 78, 81 through 84, and 88 through 90. This survey resulted in the recording of sites 15Hd462, 15Hd463, 15Hd464, 15Md326, and one isolated find, and the revisiting of 15Hd140. Attempts were made to relocate 15Hd18, 15Hd113, and 15Hd139, but were unsuccessful. Ruple (1992a) revisited sites 15Md152, 15Md153, and 15Md322 in Hunting Area 1. Ruple (1992b) revisited sites 15Hd184, 15Hd186, and 15Hd249, and made an unsuccessful attempt to relocate 15Hd248, in order to flag avoidance boundaries around the sites in Hunting Area 90 in preparation for logging activities in conjunction with the clearing of the Highway 313 easement. Ruple (1993a) surveyed all 813 acres comprising Hunting Area 4 in preparation for timber harvests in scattered parcels within the Hunting Area.

The improvement of facilities on the Fort Knox installation has resulted in several CRM studies. Sorensen and Ison (1979) surveyed a proposed telephone building expansion site and access road in the cantonment area, recording no sites. Sussenbach (1990) surveyed three weather radar installation sites, in Hunting Area 23, discovering one prehistoric isolated find. Ruple (1993b) surveyed approximately 10 acres

in the cantonment area for a shoreline maintenance project, encountering no sites. Mocas (1993) reported on the examination of approximately 165 acres in and around a proposed landfill and borrow area, which located no sites in the highly disturbed area. Mocas (1994) surveyed a proposed sports complex project area in the cantonment, encountering no archeological sites. A survey of the proposed borrow pit for improvements of the Cedar Creek airstrip (Schenian and Mocas 1994 [in preparation]) resulted in the recording of one site.

The development, expansion, or improvement of training areas has resulted in a number of CRM studies. Driskell and O'Malley (1979) surveyed the Wilcox Gunnery Range, recording sites 15Bu393 through 15Bu397. Schenian (1991) surveyed 116 acres in portions of Hunting Areas 17, 30, and 41, in conjunction with the Fort Dix realignment, re-examining 15Bu303, and recording 15Bu492, 15Hd459, and two prehistoric isolated finds. Hemberger (1991) also surveyed approximately 405 acres in seven construction sites in Hunting Areas 17, 24, 31, 32, 34, and 54, in conjunction with the Fort Dix realignment. This study resulted in the recording of 15Hd461 and 15Bu504, the revisiting of 15Bu299 and 15Bu385, and the unsuccessful attempt to relocate previously recorded site 15Hd274. Hemberger (1991) surveyed a total of 126 acres in four proposed construction areas in the Yano Tank Range, in Hunting Area 93, recording 15Hd460, revisiting 15Hd178, 15Hd182, and 15Hd282, and unsuccessfully attempting to relocate previously recorded site 15Hd283. Hemberger (1992) surveyed a 7.5 acre borrow area in Hunting Area 24, proposed to be used for the consolidation and improvement of two training ranges, and encountered no sites.

In conjunction with land sales, Ball (1987) surveyed approximately 196 acres in the Bullitt County portion of Fort Knox, recording sites 15Bu479 through 15Bu481 and describing one post-1950, or modern, house foundation. Ball (1991b) also surveyed a 19 acre tract near Radcliff prior to disposal of the tract, recording two historic/modern trash dumps which were not assigned state site numbers. Hale (1981) surveyed the Otter Creek Park, recording 15Md243 through 15Md303. Portions of Otter Creek Park, now owned by the City of Louisville, were once part of the Fort Knox military installation, but were disposed of in the 1970's.

Road construction and improvements have resulted in a number of CRM projects on the military reservation. McGraw (1976) surveyed the proposed U.S. 60 bridge and approaches near Otter Creek park, encountering no sites in a 2.35 mile long corridor which passes through Hunting Areas 7 through 9 and 11 and 12. Fiegal (1982) surveyed the Radcliff Industrial Park access road, including land in Hunting Area 15 as well as off the installation. He recorded 15Hd403 and 15Hd404 off the installation, and revisited 15Hd215 and

15Hd272 on the installation. Webb and Brockington (1986) surveyed the 4.75 mile long Kentucky Highway 1638 realignment corridor, which included portions of Hunting Areas 5 and 7 through 10. They revisited sites 15Md176, and 15Md182 through 15Md185, and recorded 15Md306, 15Md307, and 15Md309. Sites 15Md176, 15Md182, 15Md183, and 15Md307 were all parts of the former town of Garnettsville. The latter three sites were tested (Wheaton 1982), but 15Md176 was not tested because it fell outside the 1638 realignment easement. DiBlasi (1986) surveyed 14 alternative alignments of the approximately 20 km (12.4 miles) long Kentucky Highway 313 corridor, which includes portions of Hunting Areas 80 through 83 and 90, as well as land outside the installation. A total of 27 sites (15Hd406-15Hd430 outside the installation, and 15Hd135, 15Hd184, 15Hd186, 15Hd248, 15Hd249, 15Hd253, 15Hd431, and 15Hd432 on the installation), some previously recorded, were located in the survey corridor. Hixon (1992) tested 15Hd423 and 15Hd426, and archeologists from Wilbur Smith Associates tested six sites on the installation, including 15Hd249 and 15Hd253 (Fenton 1993: personal communication to Schenian). A recent survey of proposed borrow pits for the Cedar Creek-Yano Road improvements (Mocas 1994b [in preparation]) resulted in the recording of two sites, the revisiting of 15Hd120, and the unsuccessful attempt to relocate 15Hd246. Previously recorded site 15Hd121 also fell within this last project area, but could not be inspected due to weapons training taking place on the nearby Yano Range.

In addition to the CRM projects, several sites have been recorded on the military reservation in non-CRM contexts. Funkhouser and Webb (1932) published a catalog of archeological sites in the state, with the information gained primarily through correspondence with amateur archeologists, collectors, and local historians, and included the description of two sites now on the military reservation. These are 15Md10, a mound group on Indian Hill, and 15Md11, a mound near the mouth of Otter Creek (Funkhouser and Webb 1932:281). Lee Hanson recorded 15Hd17 and 15Hd18, while attending ROTC training camp at Fort Knox in 1961 (Hanson 1961a, 1961b; Dr. R. Berle Clay 1991: personal communication). The wife of a soldier stationed at Fort Knox partially excavated 15Hd273, a mound in Hunting Area 6, in 1955 (Anonymous 1955).

Of greatest relevance to the current survey are the O'Malley et al. (1980) survey and the Hemberger (1991) survey. No sites are recorded within a 1.0 km radius of the project area. No archeological sites or standing structures listed on or eligible for listing on the National Register of Historic Places are located in or immediately adjacent to the current project areas.

III. SURVEY PREDICTIONS

Based on previous archeological research in the area, the history of settlement, and the environmental setting of the project area, the following results were expected:

- 1) The Yano Range has been in use for approximately 40 years, and was subject to extensive disturbance during land clearing and construction of the original range and of the range improvements in 1992. It was expected that much of the project area would be heavily disturbed and little or no intact cultural material would be present.
- 2) The 1940's Fort Knox land acquisition maps depict the locations of former property boundaries, but not of former structures. Where former residence locations are known for the installation, residences on or near the major floodplains were usually located in the hollows at the base of the ridges and bluffs and not on the more flood prone areas. The project area has a low potential for historic residences.
- 3) The project area was located at the boundary of three properties at the time of acquisition.
- 4) Surface alteration in the project vicinity has been extensive in some portions of the Yano Range due to historic agricultural practices (e.g., bedfallowing and diversion terrace construction) and due to the construction and use of the Yano Range. It is not possible to identify the details of the original topography, which would be useful in predicting the location of prehistoric sites, in many areas of the Yano Range.

IV. SETTING AND FIELD METHODS

The proposed Target 10-Alpha borrow pit is located in the Mississippian Plateau physiographic region of Kentucky (McGrain and Currens 1978:35) on the broad floodplain of the Rolling Fork River. Drainage in the project area is into tributaries of the Rolling Fork, which lies 1.15 km north of the site. The elevation of the project area is approximately 450 feet. The soils in the project area are classified as McGary-Markland-Nolin soil association (Arms et al. 1979: General Soil Map) and the soil series and type are McGary silt loam soil (Arms et al. 1979:Sheet 9).

The project area is bounded to the west, northwest, and east by gravel roads, and to the south by a shallow ditch and the target berm. Ditches 2 to 3 m deep and approximately 3 m wide separate the bermed gravel roads from the project area.

In general, the project area was systematically walked in east-west transects at 10 m intervals. The project area was in grass and low weeds, with many open patches. Small areas of standing water were present, especially near the north end of the project area. Ground surface visibility was generally greater than 50 percent, although there were some patches of dense grass which obscured the ground surface in limited areas. No archeological materials were observed in the surface inspection of the project area.

Although the installation had attempted to clear the area of unexploded ordnance through plowing and dozing during the 1992 range construction, and no explosive rounds have been fired on the Yano Range since its re-opening, the Explosive Ordnance Device (EOD) specialist who accompanied the CRM branch staff in the field warned us that there was still some potential for live M-40 rounds in the Target 10-Alpha vicinity. These rounds are sufficiently small that they may be missed in munition clearing operations. Subsurface inspection of the project area was therefore limited to the scraping of the profile of an erosional gully at the north margin of the project area, the visual inspection of an erosional gully near the southwest corner of the project area, and the inspection of the shallow ditch which forms the south boundary of the project area. The soil profiles in the erosional gullies consisted of compact clay to a depth of at least 1.5 m below ground surface, and suggested that the proposed borrow area consisted partially or entirely of artificial fill. The observed disturbed soil profile fits with the degree of land alteration apparent in this vicinity between 1985 (Figure 2) and 1991 (Figure 3).

V. CONCLUSIONS AND RECOMMENDATIONS

The Phase I archeological survey of the proposed Target 10-Alpha borrow pit resulted in the discovery of no archeological materials or deposits. The soil profiles observed in erosional gullies at the margins of the proposed borrow pit suggest that all or a portion of the proposed borrow pit area is artificial fill placed at this location during the construction or improvement of the Yano Range. It is recommended that the installation be permitted to use the Target 10-Alpha borrow pit as proposed.

In the remote possibility that archeological materials are discovered during earthmoving activities in the borrow pit area all activity in the vicinity of the finds must

cease and the State Historic Preservation Officer (502-564-6661) and the DPW Cultural Resource Management Branch (502-624-6581) should be contacted, so a representative of those agencies may evaluate the materials. Also, if human remains, regardless of age or cultural affiliation, are discovered, all activity in the vicinity of the remains must cease immediately, and the state medical examiner (502-564-4545) and the appropriate local law enforcement agency (Fort Knox Law Enforcement Command, 502-624-6852) must be contacted, as stipulated in KRS 72.020.

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APPENDIX A.
RESUMES OF KEY PERSONNEL

Pamela A. Schenian
Staff Archeologist and Project Principal Investigator

Office Address: Directorate of Public Works
ATTN: ATZK-DPW (Schenian)
U.S. Army Armor Center and Fort Knox
Fort Knox, Kentucky 40121-5000
Phone: (502) 624-6581

Date and Place of Birth: January 1, 1959; Waukesha, WI.

Present Position: J.M. Waller & Associates/Fort Knox Staff
Archeologist and Cultural Resource Manager

Education:

A.B.D. in Anthropology, Northwestern University, 1984.
M.A. in Anthropology, Northwestern University, 1982.
A.B. in Anthropology, Bryn Mawr College, 1980.

Previous Employment:

Senior Staff Archeologist, Archeology Service Center,
Department of Sociology, Anthropology, and Social Work, Mur-
ray State University, Murray, KY, November 1991-June 1993;
Staff Archeologist, November 1983-November 1991.

Southern Illinois University, Carbondale, IL: Field
Technician, November-December 1985, September-October 1984.

Illinois State Museum Society, Springfield, IL: Field
Assistant II (Supervisor), summer 1983; Field Technician,
summer 1981.

Center for American Archeology, Kampsville, IL: Field
Technician, summer 1982.

Department of Anthropology, Northwestern University,
Evanston, IL: Teaching Assistant, 1981-82 academic year.

Great Lakes Archeological Research Center, Milwaukee,
WI: Field Technician, summer 1979.

Field Research Experience:

Field experience on prehistoric and historic archeologi-
cal projects in the states of Illinois, Indiana, Kentucky,
New Jersey, South Dakota, Tennessee, and Wisconsin, 1979-
present.

Professional Publications, Reports, Papers and Manuscripts:
84 CRM contract reports on projects in Indiana, Kentucky,
and Tennessee.

1 Homicide site excavation contract report prepared in lieu
of court testimony in Illinois.

7 Papers presented at professional conferences.

5 Publications, 1 in press.

Doctoral candidacy qualifying paper: "A Theory of Individ-
ual Style Variation for Archeological Studies".

Manuscript submitted in partial fulfillment of the M.A.
requirements: "Models of Environmental-Cultural Relation-
ships: Testing with Archeological Evidence".

Stephen T. Mocas
Assistant Staff Archaeologist

Office Address: Directorate of Public Works
ATTN: ATZK-DPW (Mocas)
U.S. Army Armor Center and Fort Knox
Fort Knox, Kentucky 40121-5000
Phone: (502) 624-6581

Present Position: University of Louisville Program of
Archaeology/Fort Knox Assistant Staff Archeologist

Education:

Completed one year of doctoral program, Southern Illinois University, Carbondale, Illinois, 1972.

B.A. in Anthropology, University of Louisville, 1971.

Previous Employment:

Indiana University, Bloomington, Indiana: Staff Archaeologist, September 1991-November 1993.

Murray State University, Murray Kentucky: Staff Archaeologist, November 1991-November 1993.

Jefferson Community College, Louisville, Kentucky.
Anthropology Instructor, August 1981-December 1982.

Louisville School of Art, Louisville, Kentucky: Anthropology Instructor, January-May 1976.

University of Louisville Archaeological Survey, Louisville, Kentucky. Project Director, Field Supervisor, or Research Assistant on various projects, July 1969-January 1977.

State University of New York of Buffalo, Buffalo, New York. Senior Field Worker, June-August 1970.

Field Research Experience:

Field experience, Phase I-III, prehistoric and historic archeological projects in the states of Illinois, Indiana, Kentucky, New York, and Tennessee, 1969-present.

Research Grants:

Six grants for fieldwork and research.

Professional Publications, Reports, Papers and Manuscripts:

- 3 non-contract site reports on projects
- 11 CRM contract reports on projects
- 5 Chapters in additional site reports.
- 4 Publications, 1 in press.